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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

June 9, 2008

Reply To
Attn. Of: **OEA-095**

MEMORANDUM

SUBJECT: Data Validation for Harbor Oil Oversight Sampling, Case# 37399, SDG: MJ8K20, Inorganic Analyses

FROM: Donald Matheny, Chemist
Environmental Services Unit, OEA

TO: Chris Cora, Remedial Project Manager
Office of Environmental Cleanup (ECL-115)

CC: Stuart Currie, Parametrix

The data validation of inorganic analyses for the above sample set is complete. Four water samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. The sample numbers for this delivery group are:

MJ8K20 MJ8K21 MJ8K22 MJ8K24

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA CLP National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (ICP 180 days, Hg 28 days). The Sample was collected on 5/14/08 and 5/15/08. ICP-MS analysis was conducted on 5/20/08 and 6/4/08. Mercury analysis was conducted on 5/28/08.

INSTRUMENT CALIBRATION/VERIFICTION - Acceptable

For the ICP-MS analysis, instrument tuning and calibration were performed in accordance with method requirements. Verification standard results (94-105%) were within the frequency (10%) and recovery (90-110%) criteria. Appropriate internal standards were analyzed and percent recoveries met the recovery criterion (60-125%).

For mercury, a blank and five standards were digested for instrument calibration. The correlation coefficient (0.999) met the criterion ($\geq$ 0.995). Recoveries for verification standards (104-109%) met the frequency (10%) and recovery (80-120%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analysis. ICS recoveries met the recovery criteria ($\pm$ 20%; $\pm$ 3xCRDL) for all elements with the exception of zinc. No action was taken as the high zinc concentration in the affected sample was not impacted by the ICS.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries (95-106%) for the LCS were within the established control limits (80-120%) for aqueous samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed in accordance with method requirements. Detected blank results were below a factor (5X) that could impact sample results with the exception of antimony, arsenic, cadmium, chromium, lead, thallium and zinc. Affected samples were qualified (U) for these analytes.

MATRIX SPIKE ANALYSIS - Acceptable

A matrix spike analysis was performed for sample MJ8K20. Percent recoveries (82-109%) were within the recovery criterion (75-125%).

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample analysis was performed for sample MJ8K20. Relative percent differences (< 1%) were within the acceptance criteria ($\leq$ 20%; $\pm$ CRDL) for the duplicate sample analysis.

ICP-AES SERIAL DILUTION

A five-fold serial dilution was performed for sample MJ8K20. Percent differences ($\leq$ 1%) were within the criterion ($\leq$ 10%) for the serial dilution analysis with the exception of cobalt (15%). Cobalt data were qualified (J) with a potential low bias.

ASSESSMENT SUMMARY

The following is a summary of qualified data: The laboratory applied (D) qualifier indicates that the initial sample digest contained the analyte at a concentration that exceeded the instrument's calibration range and that a dilution was performed.

Antimony, arsenic, cadmium, chromium, lead, thallium and zinc data were qualified (U) due to the detected presence of these elements in the preparation and/or instrument verification blanks.

Cobalt data were qualified (J) due to a high percent difference in the serial dilution results. This analysis was also suggestive of a potential negative suppression resulting in a low bias being applied to the data.

DATA QUALIFIERS

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J - The associated value is an estimated quantity.

R - The data are unusable. The analyte may or may not be present in the sample.

UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8K20

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 37399 NRAS No.: 1555.0 SDG NO.: MJ8K20

Matrix (soil/water): WATER Lab Sample ID: 0805044-01

Level (low/med): LOW Date Received: 05/16/2008

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	0.53	J	U	MS
7440-38-2	Arsenic	3.1			MS
7440-39-3	Barium	141			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	0.45	J	U	MS
7440-48-4	Cobalt	1.2		E J	MS
7440-50-8	Copper	0.18	J		MS
7439-97-6	Mercury	0.20	U		CV
7439-92-1	Lead	0.03	J	U	MS
7439-96-5	Manganese	591			MS
7440-02-0	Nickel	0.75	J		MS
7782-49-2	Selenium	5.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	0.09	J	U	MS
7440-62-2	Vanadium	5.0	U		MS
7440-66-6	Zinc	3.8			MS

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8K21

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 37399 NRAS No.: 1555.0 SDG NO.: MJ8K20

Matrix (soil/water): WATER Lab Sample ID: 0805044-02

Level (low/med): LOW Date Received: 05/16/2008

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	0.24	~~J~~	U	MS
7440-38-2	Arsenic	11.2			MS
7440-39-3	Barium	383			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	1.1	J		MS
7440-48-4	Cobalt	1.3		~~B~~ J	MS
7440-50-8	Copper	0.24	J		MS
7439-97-6	Mercury	0.20	U		CV
7439-92-1	Lead	0.03	~~J~~	U	MS
7439-96-5	Manganese	1730			MS
7440-02-0	Nickel	2.9			MS
7782-49-2	Selenium	5.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	0.06	~~J~~	U	MS
7440-62-2	Vanadium	1.8	J		MS
7440-66-6	Zinc	1.1	~~J~~	U	MS

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EPA SAMPLE NO.

MJ8K22

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 37399 NRAS No.: 1555.0 SDG NO.: MJ8K20

Matrix (soil/water): WATER Lab Sample ID: 0805044-03

Level (low/med): LOW Date Received: 05/16/2008

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	0.18	J	u	MS
7440-38-2	Arsenic	10.7			MS
7440-39-3	Barium	231			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	0.03	J	u	MS
7440-47-3	Chromium	0.49	J	u	MS
7440-48-4	Cobalt	3.6		E J	MS
7440-50-8	Copper	0.42	J		MS
7439-97-6	Mercury	0.20	U		CV
7439-92-1	Lead	0.05	J	u	MS
7439-96-5	Manganese	4720			MS
7440-02-0	Nickel	3.5			MS
7782-49-2	Selenium	5.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	0.56	J		MS
7440-66-6	Zinc	5.0			MS

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8K24

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 37399 NRAS No.: 1555.0 SDG NO.: MJ8K20

Matrix (soil/water): WATER Lab Sample ID: 0805044-04

Level (low/med): LOW Date Received: 05/16/2008

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	0.11	J	U	MS
7440-38-2	Arsenic	0.07	J	U	MS
7440-39-3	Barium	10.8			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	0.18	J	U	MS
7440-48-4	Cobalt	0.65	J	B J	MS
7440-50-8	Copper	0.39	J		MS
7439-97-6	Mercury	0.20	U		CV
7439-92-1	Lead	2.9			MS
7439-96-5	Manganese	126			MS
7440-02-0	Nickel	1.0			MS
7782-49-2	Selenium	5.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	0.45	J		MS
7440-66-6	Zinc	9850		D	MS

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